CONTENTS OF VOLUME VIII.

NUMBER XXII.

Page.

ART. I. A Monograph of the Ancient Monuments of the State of Kentucky; by E. G. SQUIER, - - - - - - - 1

II. Notice of, and citations from a Voyage of Discovery and Research in the Southern and Antarctic Regions, during the years 1839–43, by Captain Sir JAMES CLARK ROSS, R. N., Knt., D.C.L. Oxon., F.R.S., etc., - - - - - - 14

III. On Ancient Sea Margins; by R. CHAMBERS, Esq., - - - 33

IV. On the Diurnal Variations in the Declination of the Magnetic Needle, and in the Intensities of the Horizontal and Vertical Magnetic Forces; by Prof. WILLIAM A. NORTON, - - - 35

V. On the Theory of Numbers; by J. B. LUCE, - - - - 55

VI. Review of M. Tuomey's Final Report on the Geological Survey of South Carolina, presented to the Boston So. Nat. History, May 2d, by THOMAS S. BOUVÉ, - - - - - 61

VII. Some Observations upon Emulsine and its Composition; by B. W. BULL, - - - - - - - - - - - 74

VIII. Observations on Terraces; by JAMES D. DANA, - - 86

IX. On some principles to be considered in Chemical Classifications; by T. S. HUNT, - - - - - - - - - 89

X. Thoughts on Ancient Metallurgy and Mining in Brigantia and other parts of Britain, suggested by a page of Pliny's Natural History; by JOHN PHILLIPS, Esq., F.R.S., F.G.S., 96

XI. Chemical Examination of Algerite, a new mineral species; by T. S. HUNT, of the Geological Commission of Canada: including a description of the Mineral, by F. ALGER, Esq. (Read before the Boston Society of Natural History, by JOHN BACON, Jr., M.D.) - - - - - - - - 103

SCIENTIFIC INTELLIGENCE.

Chemistry and Physics.—On the Fatty Acids of Castor Oil, by M. SAALMÜLLER, 106.—On Taurine and a substance isomeric with it, by J. REDTENBACHER: On Carbothialdine, a new organic base, by Prof. J. REDTENBACHER and Prof. J. LIEBIG, 107.—On the action of Chlorine upon Benzoate of Potash, by E. ST. EVRE: On the identity of Picric, Nitrophenisic and Chrysolepic Acids, 108.—On the analysis of some of the Sulphur Acids, by MM. FORDOS and GELIS: Ink for Steel Pens, by M. RUNGE: On the Application of Liquid Hydrocarbons to Illumination, by C. B. MANSFIELD, 109.—On a new acid of Sulphur, by MM. FORDOS and GELIS: On a new Borate of Soda, by Dr. P. BOLLEY, 110.—Solubility of Chlorid of Silver in Hydrochloric Acid: Analysis of Phosphates of Manganese, by M. W. HEINTZ, 111.—Phosphate and Pyrophosphate of lime, by W. BAER: Process of extracting Nickel and Cobalt followed in a Manufac-

tory at Birmingham, by M. Louyet, 112.—On Liquid Protoxyd of Nitrogen, by M. Dumas, 113.—On a new Product of the dry Distillation of Amber, by L. F. Bley and E. Diesel, 114.—On the Action of Chloroform on the Sensitive Plant (Mimosa pudica), by Professor Marcet of Geneva, 115.—Analysis of the Water of the Mediterranean on the Coast of France: Impurity of Commercial Bromine, 116.—Method of Soldering cast-iron with wrought-iron: Mode of Silvering Glass by the employment of Gun-Cotton, 117.—On a Mode of rendering Substances incombustible, by Robert Angus Smith, Ph. D., Manchester, 118.

Mineralogy and Geology.—Randanite a native hydrated Silica from Algiers, by M. Salvetat, 120.—On Pistomesite and Mesitine, by M. Breithaupt: Analysis of Lardite from near Voigtsberg, in Saxony, by M. Karsten: Chemical Analysis of Glinkite, by W. von Beck: Neolite, a new mineral, by M. Scheerer, 121.—On Völknerite, a new mineral from the mines of Schisschimsk, by M. Hermann: Analysis of Pyrophyllite of Spaa, by M. Rammelsberg: Analysis of Talc of Rhode Island and Steatite of Hungary, by M. A. Delesse: On a new Hydrosilicate of Alumina, by MM. Damour and Salvetat: Philippsite and Gismondine, by M. Marignac: On the composition of Heulandite, by M. Damour, 122.—On the identity of Osmelite and Pectolite: On Disterrite, from the valley of Fassa in Tyrol, by M. von Kobell: On Glaucophane, by M. Hausmann: On Chloritoid: On Humite: On Epidote, 123.—On Zygadite, by M. Breithaupt: Bodenite, 124.—Muramontite, a new mineral, by M. Kerndt: Monazitoid, a new mineral from near Lake Ilmen, by M. Hermann: Crystallization of Uralorthite, by N. von Kokscharov, 125.—Niobite: On the Yttrotantalite of Ytterby: On Eukolite, a new mineral, by M. Scheerer: On Crystallized Pitchblende, by M. Th. Scheerer: On Euxenite from Tvedenstrand, by M. Th. Scheerer, 126.—New Minerals, by M. Breithaupt: Telluric Bismuth from Brazil, by M. A. Damour: Analysis of Copper Blende, by C. F. Plattner: Analysis of Phosphates of Copper from Nischne Tagilsk, by M. R. Hermann: On Mendipite, by M. Schnabel: On a Native Antimonite of Mercury, by M. Domeyko, 127.—Arsenical Nickel from Oelsnitz, by M. H. Wackenroder: On an Arsenio-sulphuret of Nickel, by MM. Wackenroder and Ludwig: On Polymerous isomorphism, by M. Naumann: Analysis of California Gold, 128.—On some newly discovered Substances from the African Guano Deposits, by Thornton J. Herapath, Esq., 129.—On the probable extent of the Flora of the Coal-Formation in Britain, by Dr. Hooker, 131.—The Himalayan Alpine Land, by B. H. Hodgson, Esq., 133.

Zoology.—Synopsis of the Genera of Gammaracea, by James D. Dana, 135.—On the Pancreatic Juice, by M. Bernard, 140.—A description of the characters and habits of Troglodytes gorilla, by Thomas S. Savage, M.D., 141.—

Miscellaneous Intelligence.—Telegraphic Operations of the Coast Survey—Velocity of the Galvanic wave, 142.—New Planet: The American Association for the Promotion of Science, 145.—C. G. Page on Galvanic Light, 146.—*Obituary.*—Julius T. Ducatel, 146.

Bibliography.—Report in relation to Sugar and Hydrometers: Mohr, Redwood and Proctor's Pharmacy, 150.—Chemical Analysis, Qualitative and Quantitative, by Henry M. Noad, with numerous additions, by Campbell Morfit: The Fossil Footmarks of the United States and the Animals that made them, by Edward Hitchcock, D.D., LL.D., 151.—Additional Observations on a new living species of Hippopotamus of Western Africa, by S. G. Morton, M.D.: On the nature of Limbs, by Richard Owen, F.R.S., 152.—Report on the Geological Survey of Canada, for the year 1847-48, 154.—The Book of the World, by Richard S. Fisher, M.D.: Chemical Technology, or Chemistry applied to the Arts and Manufactures, by Dr. F. Knapp: Twelve Lectures on Comparative Embryology, delivered before the Lowell Institute in Boston, December and January, 1848-9, by Prof. Louis Agassiz, 156: Twelve Lectures on Comparative Physiology, delivered before the Lowell Institute in Boston, January and February, 1849, by Jeffries Wyman, M.D.: Pioneer History, being a brief account of the first examinations of the Ohio Valley and the early settlement of the North West Territory, chiefly from original manuscripts, &c., by S. P. Hildreth, 157.—The Earth and Man: Lectures on Comparative Physi-

cal Geography in its relation to the History of Mankind, by Prof. Arnold Guyot, translated from the French, by C. C. Felton: Système Silurien du Centre de la Bohême, by Joachim Barrande: Third Annual Report of the Board of Regents of the Smithsonian Institution, 158.—Manual of Mineralogy, by J. Nicol, 159.

List of Works, 159.

Appendix.—Fossil Footmarks, I. Lea, 160.

NUMBER XXIII.

Page.

Art. XII. Notice of Dr. Hooker's Flora Antarctica; by Prof. Asa Gray, - - - - - - - - - - - 161

XIII. On the Quantitative Separation and Estimation of Phosphoric Acid; by H. Rosè, - - - - - - - - 181

XIV. Abstract of an Article on the Conducting Powers of the Metals at different temperatures, &c., by M. Edmond Becquerel, - - - - - - - - - - - 185

XV. A Memoir of Charles Alexander Lesueur. Read before the American Philosophical Society, the 6th of April, 1849; by George Ord, - - - - - - - - - - 189

XVI. On the Diurnal Variations in the Declination of the Magnetic Needle, and in the Intensities of the Horizontal and Vertical Magnetic Forces; by Prof. William A. Norton, 216

XVII. On the Method of determining the Geographical Longitude by Altitudes of the Moon; by Prof. W. Chauvenet, - 226

XVIII. On the Electro-Chronograph; by the inventor, John Locke, - - - - - - - - - - - 231

XIX. On the Curve described by a Movable Pulley; by Prof. A. Secchi, - - - - - - - - - - - 252

XX. Thoughts on Ancient Metallurgy and Mining in Brigantia and other parts of Britain, suggested by a page of Pliny's Natural History; by John Phillips, Esq., F.R.S., F.G.S., 258

SCIENTIFIC INTELLIGENCE.

Chemistry and Physics.—On Margaritinic Acid, by Louis Saalmueller, 263—On some New Phenomena of Light and Actinism, by Mr. Hunt, 265.—On the direct production of Heat by Magnetism, by W. R. Grove, Esq., 266—Glonoine, 267.—On the Action of Alkalies and Acids upon Aldehyde, by H. Weidenbusch, 268.—On an Organic Compound containing Arsenic, by Prof. Wöhler: On Liquid Protoxyd of Nitrogen, by M. Dumas, 269.—On Anhydrous Nitric Acid, by M. Deville: On the Composition of Stearic and Margaric Acids, by Messrs. Laurent and Gerhardt, 270—On Caprylone, by G. Gückelberger: Composition of Bone Earth, by Dr. W. Heintz: On the reaction of Iron and Zinc with Anhydrous Sulphuric Acid and with Sulphates, by A. d'Heureuse, 271.—Hydrated Valerianate of Zinc: On the Passage of Hydrogen gas through solid bodies, by M. Louyet: On Emulsine, by B. W. Bull, 272.

Mineralogy and Geology.—On Chloritoid and Masonite, by J. D. Whitney, 272.—Black Oxyd of Copper of Lake Superior, 273.—On Arkansite: Baterine: Notices of American Minerals, by Prof. C. U. Shepard, 274.—On the existence of Mercury in the Tyrol, by M. H. Rose: Mud of the Nile, 275.

Zoology.—Conspectus Crustaceorum quæ in Orbis Terrarum Circumnavigatione, Carolo Wilkes e Classe Reipublicæ Fœderatæ Duce, lexit et descripsit JACOBUS D. DANA, 276.

Miscellaneous Intelligence.—On Certain Frozen Leaves, by J. GORGAS, 286.—On the Mechanism and Functions of the Organs of Voice in Man; with the introduction of a case of double utterance, by Dr. PETTIGREW, 287.—The Aneroid Barometer, 288.—Gold at Port Phillip, South shore of Australia, 290.—The Tin Mines of Banca, 291.—Navigation of the Arctic Regions: Type Manufacture, 292.—New Mode of copying Engravings, by M. NIEPCE: Herbaria of New England Plants, 293.—British Museum: Platinum and Diamonds in California: Medal to W. Lassell, 294.—*Obituary.*—George W. Whistler, 294.—Stephen Endlicher, 299.

Bibliography.—De Candolle's Prodromus Regni Vegetabilis: Pars XIII, Sectio Posterior, 300.—Catalogue of Plants, Native and Naturalized, collected in the vicinity of Cincinnati, Ohio, during the years 1834–1844, by THOMAS G. LEA, 302.—The Elements of Botany, by M. ADRIEN DE JUSSIEU; translated by JAMES HEWETSON WILSON, F.L.S., &c.: A Manual of Botany; being an Introduction to the Study of the Structure, Physiology, and Classification of Plants, by JOHN HUTTON BALFOUR, M.D., F.L.S., &c., 303.—Circular prepared by direction of the Hon. WM. BALLARD PRESTON, Secretary of the Navy, in relation to the Astronomical Expedition to Chile, by Lieut. M. F. MAURY, U.S.N., 303.—Introduction to Meteorology, by DAVID PURDIE THOMSON, M.D.: A Memoir on the Geological Action of the Tidal and other Currents of the Ocean, by CHARLES HENRY DAVIS, A.M., Lieut. U.S.N., 305.—Sixty-second Annual Report of the Regents of the University of the State of New York: Reports, etc., of the Smithsonian Institution, exhibiting its Plans, Operations, and Financial Condition, up to January 1, 1849: A Collection of Tables and Formulæ useful in Geodesy and Practical Astronomy, including Elements for the Projection of Maps; prepared by Capt. T. J. LEE, 306.—Description of a System of Military Bridges with India Rubber Pontons, prepared for the use of the United States Army, by Capt. GEORGE W. CULLUM, U.S. Corps of Engineers: Transactions of the New York State Agricultural Society, with an abstract of the proceedings of the County Agricultural Societies: History and Chemical Investigation of Maize, or Indian Corn, by J. H. SALISBURY, 307.—Notes on the Medical Application of Electricity, by WILLIAM F. CHANNING, M.D.: Davis's Manual of Magnetism, by DANIEL DAVIS, Jr.: Knapp's Chemical Technology, 308.—The Nautical Slide Rule, by PAUL CAMERON: Second Report of Experiments on Gunpowder, made at Washington Arsenal in 1845, '47, and '48, by Brevet Major ALFRED MORDECAI: Craig's Universal Dictionary of the English Language, embracing all the terms used in Art, Science and Literature, 309.

List of Works, 310.

APPENDIX.—American Association for the Advancement of Science, 311.

NUMBER XXIV.

Page.

ART. XXI. Notice of the Narrative of the U. S. Expedition to the River Jordan and the Dead Sea, by W. F. LYNCH, U.S.N., 317

XXII. Second Memoir on the Conducting Power of Solid and Liquid Bodies; by ED. BECQUEREL, - - - - - 333

XXIII. Ko Doü Dzu Roku, or, A Memoir on Smelting Copper, 336

XXIV. Caricography; by Prof. C. DEWEY, - - - - - 348

XXV. On the Diurnal Variations in the Declination of the Magnetic Needle, and in the Intensities of the Horizontal and Vertical Magnetic Forces; by Prof. WILLIAM A. NORTON, 350

Page.

XXVI. Chemical Examination of the Water of the Tuscarora Sour Spring, and of some other Mineral Waters of Western Canada; by T. S. HUNT, - - - - - - - - 364

XXVII. On the Decomposition of Aniline by Nitrous Acid; by T. S. HUNT, - - - - - - - - - - - 372

XXVIII. Description of a Coal Plant supposed to be new; by CHARLES WHITTLESEY, Esq., - - - - - - - - 375

XXIX. Description and Analyses of several American Minerals; by Prof. B. SILLIMAN, Jr., - - - - - - - - 377

XXX. On the Prime Meridian; by Lieut. DAVIS, U. S. N., - 394

XXXI. Contributions to the Mycology of North America; by the Rev. M. J. BERKELEY, and the Rev. M. A. CURTIS, - - 401

SCIENTIFIC INTELLIGENCE.

Chemistry and Physics.—Deflection of the Magnetic Needle by the act of Volition, 404.—On the Development of Electricity in the Act of Muscular Contraction, by M. BECQUEREL, 405.—Note relative to the Electricity developed by Muscular Contraction, by M. C. DESPRETZ, 406,—On the Polarization of Heat: Composition of Bones, 410.—On the Specific heat of Potassium, with remarks on the equivalents of Silica and the Alkalies, by V. REGNAULT, 411.—On Chloroniceic Acid, by M. E. SAINT EVRE: On the Chlorinated Products of the Decomposition of Quinic Acid, by Dr. G. STAEDLER, 412.—Volatilization of Carbon, by C. DESPRETZ, 413.—On the Atomic Weight of Silica, by H. KOPP, 414.

Mineralogy and Geology.—Notes on the California Gold Region, by Rev. C. S. LYMAN, 415.—Geological Survey of Tennessee, 419.—On the Altered Dolomites of the Island of Bute, by JAMES BRYCE: Plumbic Ochre from Mexico, 420.—On the Formation of Minerals, by M. H. DE SENARMONT: On the Decomposition of Rocks, by M. EBELMEN, 421.—Phosphate of Lime in Greensand and Marl, 422.—Arkose, 424.

Zoology.—Conspectus Crustaceorum, &c., Conspectus of the Crustacea of the Exploring Expedition, by J. D. DANA, 424.—Gammaracea, 428.

Astronomy.—Elements of the planet Hygeia: Second Comet of 1849, 428.—Goujon's Comet: Shooting Stars of April 20, 1849: Shooting Stars of August 10, 1849, 429.

Miscellaneous Intelligence.—On the Magnetic Relations of the Positive and Negative Optic Axes of Crystals, by Professor PLÜCKER, in a letter to Dr. FARADAY, 430.—Some facts relative to the Spheroidal State of Bodies, Fire Ordeal, Incombustible Man, &c., by P. H. BOUTIGNY, 431.—Practical Application of the Law pointed out by Dr. R. D. Thomson, of the proper Balance of Food in Nutrition, by Dr. C. REMIGIUS FRESENIUS, 435—Meteorite of Arva, 439.—On the Preparation of a Glaze for Porcelain resembling Aventurine, by A. WÆCHTER, 440.—On Chicory-Coffee, its History, Manufacture, Adulterations and means of detecting them, by A. CHEVALIER, 441.—On an unnoticed kind of abnormal vision, by Prof. C. DEWEY, 443.—Analysis of the Waters of the Dead Sea, by R. P. F. MARCHAND: American Association for the Advancement of Science: British Association, 444.—Total Quantity of Lead Ore raised and Lead smelted in the United Kingdom in 1848, 448.—California Gold: Coal in Egypt: Astronomical Journal, 449.—Geological Surveys of the United States, 450.—*Obituary.*—Ludwig Frederick Wilhelm August Seebeck: Johann Wolfgang Döbereiner: Wilhelm Ferdinand Erichson, 450.

Bibliography.—Iconographic Encyclopædia of Science, Literature and Art, systematically arranged, by G. HECK, 451.—Genera Floræ Americæ Boreali-orientalis illustrata, figures, &c. by ISAAC SPRAGUE, descriptions, &c. by Prof.

Asa Gray, M.D., 452.—The Sea Side Book, being an Introduction to the Natural History of the British Coast, by Dr. W. H. Harvey: Phycologia Britannica: or, History of the British Sea Weeds, including Colored Figures of each Species, with Growth, Fructification, &c., by Dr. W. H. Harvey, M.R.I.A.: Nereis Australis: or, Illustration of the Sea Weeds of the Southern Ocean, including figures of Growth and Fructification, &c., by Dr. W. H. Harvey, M.R.I.A., &c.: A Manual of the British Marine Algæ, by Dr. W. H. Harvey, M.R.I.A., &c.: Species, Genera et Ordines Algarum, seu Descriptiones succinctæ Specierum Generum et Ordinum quibus Algarum Regnum constituitur, auctore Jacobo Georgio Agardh, 453.—Species Algarum, auctore Friderico Traug. Kützing, Prof. Nordhusano: Tabula Phycologicæ, oder Abbildungen der Tange, herausgegeben; von F. T. Kützing: Geology of the United States Exploring Expedition under C. Wilkes, U. S. N., by James D. Dana, 454.—Report on Zoophytes, of the Exploring Expedition under C. Wilkes, U. S. N., by James D. Dana: Principles of the Mechanics of Machinery and Engineering, by Prof. Julius Weisbach, edited by Walter R. Johnson, A.M.: The Progress of the Development of the Law of Storms and of the Variable Winds, with the Practical Application of the subject to Navigation, by Lieut. Col. William Reid, C.B., F.R.S., 455.—Outlines of Astronomy, by Sir John F. W. Herschel, Bart. K.H.: Patent Office Reports for 1848: Memorials of John Bartram and Humphrey Marshall, with notices of their Botanical contemporaries, by Wm. Darlington, M.D., LL.D.: Report on Railroad and Canal Routes between the Atlantic and Pacific Oceans, by Hon. John A. Rockwell, 457.

List of Works, 457.

Index, 459.

ERRATA.

Page 254, line 10th from top, for $\frac{(a^2c^2)x}{a^2y}$ read $\frac{(a^2-c^2)x}{a^2y}$

Page 419, line 6th from top, for Geographical, read Geological.